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THE DEPUTY SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301

13 JAN 1969

MEMORANDUM FOR Director, Defense Research & Engineering
Assistant Secretary of Defense (Administration)
Director, National Reconnaissance Office
Director, Defense Intelligence Agency

Recently a DCP for the MOL was provided to me for approval without its having been coordinated with the Assistant Secretary of Defense (Systems Analysis). The reason for not coordinating the paper with ASD (SA) appears to be a misinterpretation of my memorandum of 6 July 1968 which disapproved a suggestion of the ASD (SA) to develop DGMs on Communications and Intelligence.

In the future, I desire that papers on major intelligence issues being staffed within the OSD be coordinated with appropriate ASDs.

Paul H. Nitze

[redacted]

~~TOP SECRET~~ [redacted] HANDLE VIA BYEMAN CONTROL SYSTEM ONLY

RAR-B-8.

OFFICE OF THE SECRETARY OF DEFENSE

15 JAN 196

MEMO FOR _____

M/Gen James T. Stewart, SAFAL
B/Gen Russes A. Berg, SAFSS ←
Mr. Nevin I. Palley, ODDR&E
Mr. John T. Hughes, DIA

Attached are drafts of (1) a letter to the Deputy Secretary of Defense on the MOL DCP and the recent DDR&E/DIA Study of the value of VHR imagery, (2) comments on the same and (3) a paper on the value of information on ABM performance to war planners. We plan to send the final versions of these to the Deputy Secretary of Defense the afternoon of January 17. I would appreciate any comments you might have on these drafts in time to consider them inthe final version. I would like your response early on the 17th if possible

Archie L. Wood
Col USAF
Director, Intelligence Div.
OASD(SA)

HANDLE VIA BYEMAN CONTROL SYSTEM ONLY

GAMBIT HEXAGON [redacted]

GROUP 1
Excluded from automatic downgrading and declassification

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3 ATTACHMENTS

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MEMORANDUM FOR DEPUTY SECRETARY OF DEFENSE

SUBJECT: Comments on the Manned Orbiting Laboratory (MOL) Development Paper (DCP) and the DDR&E/DIA Study of Very High Resolution (VHR) Imagery

The MOL DCP (Tab A) was transmitted to you on December 5, 1968, for signature. Supporting this DCP is a DDR&E DIA study entitled, "The Need for Very High Resolution Imagery and Its Contribution to DoD Operations and Decisions". At Tab B are our detailed comments on this study which I promised you in my letter of 1969.

The MOL DCP concludes that the need for VHR imagery is great enough and urgent enough to spend more than $1.5 billion on MOL in FY 69 through FY 71. I do not believe available evidence and analysis support this conclusion.

The Value of VHR Imagery

The MOL DCP and the DDR&E/DIA study argue that VHR imagery will be valuable in two general ways. First, such imagery might improve our estimates of the capabilities of Soviet and Chinese forces, permitting us to plan less conservative, and therefore less expensive, forces. Second, VHR imagery might provide enough detail about the military characteristics of Soviet and Chinese weapons to permit better design of our weapons, either to reduce their vulnerabilities or to enhance other aspects of their effectiveness.

The most important example of the first argument is that if the Soviets were to deploy an extensive anti-ballistic missile system (ABM) which could be penetrated by means less costly than exhaustion of the ABM interceptors, VHR imagery might reveal these defects. We could then deploy a smaller offensive force, than would otherwise be needed, saving the cost of weapons required to exhaust the ABM interceptors. THIS ARGUMENT HAS SEVERAL SERIOUS WEAKNESSES.

First, if such forces were deployed by the two sides, the situation resulting would likely be unstable and possibly very dangerous. The Soviets might not recognize that their ABM is vulnerable. In other words they might not be deterred. This could lead to Soviet attempts to exploit what they perceive to be some sort of superiority. Obviously such a course of events is highly undesirable. Alternatively, the Soviets might accept the fact that our penetration tactics will work and proceed to correct the vulnerabilities in their ABM. This eventuality could lead to larger U.S. forces to exhaust the improved ABM or to an ~~instruction~~ MISREACTION between the

ATTACHMENT 1

opposing forces involving cycles of improved U.S. penetration tactics and Soviet counteractions to these.

Even if the difficulties just described did not exist, significant savings could be realized through smaller offensive developments only if a number of conditions are all met. First, a very large ABM deployment is necessary for the cost savings to be realized, since programmed U.S. offensive forces can tolerate much larger ABM forces than projected in NIPP-69. Second, the ABM must, in fact, be vulnerable to penetration tactics other than exhaustion. In short, the ABM system must be both extensive and defective.

Third, we must discover the ABM vulnerabilities at least one lead time before additional offensive forces would otherwise be needed. Fourth, the ABM vulnerabilities must be such that the time between our discovery or a program to correct the vulnerabilities and their correction is longer than the time required for us to deploy enough additional payload to exhaust the ABM. Fifth, estimates of the ABM vulnerabilities and the time to correct such ABM defects must be ~~estimated~~ made with very high confidence since a faulty estimate could lead to compromise or loss of our Assured Destruction capabilities. There is little reason to believe that any of these conditions are likely to be met. Certainly the DCP and the DDR&E/DIA study do not make convincing arguments on these points.

The second way VHR imagery might be valuable is exemplified by arguments on air defenses and armored vehicles.

Air Defense

The DDR&E/DIA study ~~agrees~~ argues, for example, that VHR imagery would have allowed earlier improved estimates of FOXBAT characteristics such as maximum speed and range. The difficulty here is that our penetration capabilities are not very sensitive to these characteristics over rather wide ranges. On the other hand, our penetration probabilities are strongly influenced by Soviet air defense capabilities at low altitude. These are, in turn, determined mainly by internal electronic characteristics of Soviet airborne radars. Overhead VHR imagery will have no capability against such radars.

Armored Vehicles

The DDR&E/DIA study argues essentially that our armored vehicle design is sensitive, for example, to the largest gun on Soviet tanks. VHR imagery would permit a better estimate of the caliber of these guns. This is no doubt true; however, our armored vehicles are vulnerable to many ~~a lot of~~ other weapons such as rocket launchers and recoilless rifles, many of which are very unlikely to be photographed by overhead VHR.

Further, Soviet general purpose weapons are not threats to deployed in large numbers, an inherently slow process. This gives us time to gather needed information from direct observation, COMINT, and other sources for any response that might be required. In short, VHR imagery in this case would give us only fragmentary information earlier than it is really needed for an effective U.S. response.

The Urgency of VHR Imagery

VHR imagery is not required to determine such things of immediate importance as numbers of Soviet strategic offensive and defensive weapons and numbers of Soviet, Bloc, and Chinese general purpose forces units, where these are deployed, and the equipment they possess. Rather, VHR imagery can contribute to highly refined estimates of the performance of such systems and refined estimates of the characteristics of developmental weapons not yet deployed. The resulting estimates even with VHR imagery will be of modest confidence because of a large number of factors. These kinds of estimates enter our force planning and operations in only secondary ways. We do have some relatively urgent intelligence needs in the general purpose forces areas, but VHR imagery will not contribute much to these. In short, a case has not been made that the need for VHR imagery is urgent. On the contrary, there are good reasons to believe that it is not. for example, intelligence on force dispositions in real time during crises,

Alternatives to MOL

This subject appears not to have been studied formally; however, there are evidently alternative systems which might be able to obtain VHR imagery at significantly lower cost than MOL, but not as early.

1. Use of GAMBIT-3 in low altitude orbits. GAMBIT-3 has been flown experimentally much lower than its normal operating altitude. It is possible that the GAMBIT or some modification of it would have performance approaching that of MOL.

2. Use of DORIAN optics in HEXAGON. According to a DDR&E study of HEXAGON, dated November 11, 1968, HEXAGON is being designed to carry DORIAN optics. The flexibility this gives in deploying VHR optics was one of the lesser arguments for HEXAGON.

3. Development of unmanned MOL only. This option was not presented in the DCP. It would appear that a development program, in which provisions for astronauts were excluded, would be substantially less expensive than the current MOL program. A satellite designed especially for the unmanned mission should also be simpler and therefore less expensive to operate.

There may be other options available. The formulation of all such options should be done by the NRO, with DDR&E support. The MOL DCP and the DDR&E/DIA study as now constituted, without alternatives to MOL, merely advocate MOL and do not present other possibly interesting choices. and evaluate

Summary

In sum, I believe we should have a program eventually to develop a VHR capability. I believe VHR may provide valuable information that we cannot now obtain, and that it will be a worthwhile, marginal addition to our collection efforts. I do not, however, believe large savings will result, nor do I believe that such imagery will make major changes in the confidence with which we estimate Soviet and Chinese threats. I do not believe that our need for VHR imagery is urgent enough to warrant the very high expenditure rates occurring now and to occur in the immediate future on MOL.

Recommendations

I recommend:

1. That the MOL DCP be turned into a DCP for a VHR satellite.

2. That the NRO and DDR&E be instructed to develop unmanned alternatives to MOL to obtain VHR imagery.

3. That the VHR imagery DCP be recoordinated, presenting the options developed by DDR&E and the NRO.